

ABSTRACT OF THE DISCLOSURE

A magnetic multilayer film deposition system having a plurality of treatment chambers for depositing a multilayer film including a plurality of magnetic films on a substrate, a conveyance system for conveying the substrate in a state shielded from the atmosphere, a metal film treatment chamber, a treatment system having treating metal film included in the multilayer film in the treatment chamber, an optical measurement system for optically evaluating the surface state of the metal film, and a control system for controlling the operation of the treatment system based on a measurement signal output from this optical measurement system, wherein when depositing a multilayer film on a substrate in the film deposition system, it is possible to manage the surface state of the metal film during the treatment process of the metal film and possible to treat the metal film precisely.